

DISASTER PLANNING IN MUSEUMS AND LIBRARIES: A CRITICAL LITERATURE REVIEW

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ABSTRACT

This paper provides a comprehensive review of literature on disaster planning in libraries and museums. Many libraries and museums are seriously damaged or destroyed by natural or human-caused disasters, but early preparation can ensure that a library or museum is adequately prepared to meet the disaster planning needs of the institution. While much has been written in the for-profit business world on disaster planning, less has been written regarding not-for-profit institutions. Such institutions, particularly libraries and museums, have special problems endemic to their situations. Issues such as minimal security, extended hours, high employee turnover, and the institutions as focal points of cultural expression can lead to serious disasters if precautions and plans for quick response to emergency situations are not in place.

From the loss of the library at Alexandria to the role of future firemen in Ray Bradbury's (1953) *Fahrenheit 451*, libraries have always been potential victims of disaster. Museums are, in a sense, simply storage sites for rare and valuable cultural icons - "the few crumbs of an artifactual feast that have made it through the centuries" (Garfield 1990, 67). Unfortunately, these institutions have rarely protected their collections as they ought, but they are quickly learning how they can plan for and diminish the impact of natural and human-caused disasters. Much of this knowledge comes from work in the field of for-profit businesses; large and small businesses generally react more quickly to a need for effective and appropriate disaster plans. Libraries, museums, and other similar non-profit organizations can take advantage of much of this work, which for-profit institutions have already performed. This paper will present some of these topics and identify sources which explain how museums and libraries can make their collections more secure and more likely to survive through time.

When the Arno River flooded central Florence in November 1966, about one-third of the collection of the Italian National Library, the Biblioteca Nazionale Centrale, was damaged, primarily due to flooding of basements. The Library, situated on the edge of the Arno, received the brunt of the disaster. Books, incunabula, manuscripts, and government documents, some dating back to the 12th century, had been stored in the basements of the building because of fear of German artillery bombings during World War II, and were never moved back upstairs. As a result, about 1.2 million documents were completely inundated in the flood. This included all of the works of the original core of the collection, numerous ancient geographic works in the process of being cataloged, the richest newspaper collection in Italy, and untold numbers of paintings, sculptures, and other books and works of art (*Aftermath...* 1967, 463).

Recent well-known disasters in America which have affected libraries and museums, in addition to for-profit businesses and corporations, have included flooding in the Midwest, numerous hurricanes and tornadoes in the Southeast, and major earthquakes in the Los Angeles and San Francisco areas. Each of these natural disasters serves as a reminder that institutions should have appropriate plans in effect, and each

identifies many institutions that do not. In addition to these natural disasters, human-caused ones, such as the bombing of the World Trade Center in New York City, or the arson fires at the Los Angeles Public Library, highlight the need for planning for non-natural disasters. Within museums and libraries, many disasters may take an extremely long time to develop. A 1959 study of 500 nonfiction books published between 1800 and 1949 found that "only three percent of the volumes studied had paper which could be expected to last more than fifty years" (Darling and Ogden 1981, in Bello 1986, 6). Other authors describe the loss of works due to acidic paper as the "quiet disaster" (Cunha 1992, 597). Such discussion of serious preservation issues is beyond the scope of this paper, but demonstrates the broad definition of "disasters" and the need for such disaster planning on all levels and through all time frames.

The Florence catastrophe became the impetus for disaster planning in libraries and museums throughout the world, and lessons learned in the massive cleanup effort that took place following the disaster are put to use daily in programs everywhere. Numerous disasters since have continued to highlight the need for appropriate planning in libraries and museums of all scales. The American Association of Museums requires that museums have a disaster plan in effect before they will accredit an institution, but having a disaster plan is simply not enough. Institutions must have methods in place for training employees in the use and proper implementation of effective disaster plans.

Unfortunately, in the library field, few institutions have disaster plans. Kahn (1993) describes the serious lack of preparation in many libraries when she writes that, of the 161 libraries responding to a preservation needs assessment survey,

only 19 percent had a disaster response plan, while an additional 17 percent were working on one; almost 64 percent had no plan at all. A similar survey by AMIGOS Preservation Service in 1992 found that three-quarters of its respondents-179 out of 239 libraries-had no disaster plan to speak of, despite the fact that 25 percent of the institutions had suffered some sort of calamity in 1992. (73-4, emphasis in original)

While reassuring library administrators that such statistics are common for almost every type of organization, Kahn nevertheless makes it clear that planning must be implemented if libraries are to survive the types of disasters that have struck American libraries in the past several years.

Like libraries, many museums are not adequately prepared for natural or human-caused disasters. The topic has been discussed in museum journals on occasion, particularly in scientific and technical journals, such as *Technology & Conservation*. Some general topic museum publications have also recognized the importance of disaster planning and have occasionally devoted significant portions of various issues to disaster planning (Ginell 1990; Babcock 1990). Slightly older works by Fennelly (1983) and Howie (1987) provide valuable information in book form, while significant and recent developments are chronicled in journal articles such as those by Gilbert (1992a, 1992b) and Roberts (1992).

In a special issue of *Museum News* focusing specifically on museum disasters and disaster planning, Jones (1990) lists a litany of cultural losses resulting solely from natural disasters. This depressing list includes a series of earthquakes in central Greece in 1981 which left significant cracks in the Parthenon and destroyed at least 60 vases in museums in Athens; earthquakes which damaged or destroyed numerous sites of architectural and archaeological significance in Guatemala and Italy in 1976, in Bulgaria in 1977, in the former Yugoslavia in 1979, and in Italy again in 1980, among others; floods in Pennsylvania in 1972 and in Houston in 1976; and horrendous fires such as one in Leningrad (now St. Petersburg) in 1988 which destroyed 400,000 books in the library of the Soviet Academy of Sciences, one in Albany, New York, which consumed 450,000 books, 270,000 manuscripts, and a one-million-card catalogue in 1911, not to mention the great fire of London in 1666, in which hundreds of booksellers lost their collections among the extensive and almost complete destruction of the center of the city.

Disaster plans do work, and museums in particularly vulnerable locations are occasionally well-prepared for disasters. One example is the Charleston Museum in South Carolina. When Hurricane Hugo came through in 1989, museum staff were ready for the impending disaster. Much more important than their immediate response was their consideration prior to the hurricane about how best to protect their artifacts

under most circumstances. Given that their site is surrounded by water and actually below sea level, administrators knew that they would have problems with flooding. In Gilbert (1992b), the museum's archivist and librarian, K. Sharon Bennett, explains that Hugo was not their first encounter with disaster planning. "We used to have exhibits on the first floor," Ms. Bennett explained. "But we learned that if between June and September we have to move them three or four times ... it's better to move them to the second floor permanently" (50).

The Charleston Museum administration took preventative measures by moving works above the expected waterline well before this particular disaster appeared. When it became clear the hurricane was headed towards their institution, they took proactive measures by backing up their computers and moving items to interior rooms. Most importantly, after the hurricane passed, they took reactive measures by determining how their disaster plan worked and how they could respond better next time. After the disaster they determined they needed better flashlights while cleaning up, they needed business interruption insurance, and they needed considerably more cash on hand. By analyzing their response and identifying needs, they will be better prepared to respond during the next disaster.

The expansion of printed resources on disaster planning for non-profit institutions has been a great benefit of the last several years. For-profit companies have written about disaster planning for a number of years, but much of the most recent literature on the topic is particularly valuable. Similarly, museums and libraries have begun focusing on disaster planning as an important topic for extensive study and development. Perhaps the most valuable work non-profit institutions can do as they prepare disaster plans is to look at what is being done in the for-profit sector. A very wide gap exists between what the two groups of organizations are currently doing, but non-profit institutions can do quite a lot to catch up simply by considering where for-profit organizations have succeeded and failed in their planning. According to one extensive overview of the current state of disaster planning:

One of the most satisfying developments in library, archives, and public records office conservation management in recent years is the fact that now there is agreement that, although disasters occur with distressing frequency, the effects of those misfortunes can sometimes be mitigated and recovery expedited by sensible planning. Managers are also beginning to realize that they can no longer jeopardize their collections by not planning to minimize the effects on their buildings and collections of great storms, fire, flooding, theft, and vandalism. It has become the responsibility of custodians and administrators of records collections to make maximum use of the now plentiful published disaster planning guidance and the recovery assistance resources in the everyday management of their establishments. (Cunha 1992, 542)

However, many, if not most, businesses are not properly prepared to respond to sudden disasters. One article, which actually focused on individual and familial disaster planning rather than corporate planning, cited the failure of repeated exposure to television coverage of natural disasters to affect the actions of most individuals. "A recent survey," the article states, "revealed that the most typical response among respondents was denial: 'It can't happen to me'" (*HR Focus* 1993, S1).

Many businesses are not prepared for a major disaster, but the literature currently available shows that individuals in a broad range of fields are considering the topic of disaster planning and how it applies to their specific subject. Articles on disaster planning in health care facilities, newspaper presses, public utilities, banking institutions, accountancies, and even the amusement and hospitality industries have appeared in recent publications. In fact, libraries and museums could learn quite a bit from the latter two industries, as they, like libraries and museums, must confront issues regarding the control, management, and responsibility of large groups of the general public in their places of business when a disaster could occur.

Despite similarities in potential responses, museums and libraries do have special concerns which many for-profit businesses do not address. The greatest is the responsibility that museums and libraries carry as protectors and preservers of items of great cultural value. When the items within a museum or the rare book collection of a library are lost, the institution has failed in a significant portion of its primary goal. Many for-profit institutions, such as financial institutions or brokerage houses, have little or no true value in the form of the information they hold. The value to these businesses is the actual information itself, not the

form in which it is preserved or presented. For those businesses in which there is great value in their inventory, such as department stores, jewelers, and the like, the value is again only fleeting - insurance, if properly arranged, will cover the loss, and the value can be replaced with new inventory.

Libraries and museums, however, are the cultural storage sites for items society feels should be preserved for posterity. Much of what museums or rare books collections preserve cannot be replaced, or can be replaced only at an extremely high cost. In the case of rare books collections, in which a particular copy of a printed work is lost, a replacement copy may eventually be available for purchase, but the world has one less copy of a scarce book every time one is lost to a flood, fire, or other disaster.

Unfortunately, the value of these collections are not always recognized by management in an effective manner. Since there is little 'profit' to be protected in libraries and museums, the incentive for preparing for disasters may be significantly lower than in for-profit situations. A brokerage house recognizes that a disaster could close it down for two weeks, resulting in a massive and possibly fatal loss of business. The museum that is closed for two weeks may feel it simply limits the availability of its collection to those who would most likely pay only a small fee to visit in the first place.

The Charleston Museum, however, discovered after Hurricane Hugo in 1989 that they needed to carry business interruption service. The librarian and archivist there explained after the disaster that, "[I]t never occurred to us to consider ourselves as a business with money coming in the door.... We didn't have business interruption insurance, so we had to be up and running as soon as possible" (Gilbert 1992b, 51). Museums and libraries must begin to look at themselves as for-profit businesses and consider items such as business interruption insurance, even if they do not earn profits.

In a review of Florida libraries and their disaster plans, it is clear that many institutions are simply not responding as they must. Despite a boom in disaster planning workshops in the 1980s,

Forty-three libraries said staff had never been to one, and only twenty-one libraries had staff that attended within the last two years. Disaster preparedness and recovery is a fast-moving field, and much new information about effective procedures for protecting and saving collections has been generated since 1985, so the need for the workshops was again confirmed. (DePew 1989, 13)

Libraries and museums must begin to recognize the dangers they face by not preparing for unexpected disasters.

Libraries and museums can turn to information from the hospitality and merchandising fields for valuable information regarding responses to disasters when a large group of the general public are present. Unlike department stores, however, many or most users of a library are not within hearing distance, much less sight distance, of an employee. As cultural institutions, libraries and museums can be popular targets for negative responses: from anti-establishment protests to terrorist attacks. One example is the attack on the Galleria degli Uffizi, in Florence, Italy in May 1993. Five people were killed and three paintings were destroyed. Several other works suffered some damage in this attack on the country's history itself, rather than on a particular political person. Such an attack makes it clear that libraries, churches, museums, and other public gathering places which impart some form of cultural history or thought are no longer safe places to work or visit.

Museums in the United States have also felt the need to consider planning for public insurrections, directed either at the institution or at society at large. The Los Angeles Public Library system suffered serious damages in riots following the verdict in the Rodney King beating case. Museums must prepare for similar attacks. Exhibits of works by artists such as Robert Mapplethorpe have caused museums to reassess their response to a potential attack, and repatriation efforts by Native Americans are another potential source of trouble for museums displaying such artifacts. In such situations, a power outage could leave an institution vulnerable to theft or serious damage (Gilbert 1992a, 23).

The accessibility of museums and libraries, considered by many to be one of their greatest democratic virtues, is also one of their most dangerous undoings. When individuals want to cause damage to a collection, libraries in particular offer one of the best targets. Unseen, an individual can take any item in a library's collection and start a fire. Assuming it catches, the fire itself will likely not do as much damage as the resulting spray from sprinklers. Fire sprinklers ruin many more books than fire ever does, and yet there is no other effective response that a large, open library can institute. The public, those for whom the libraries and museums are created, can serve as one of the most serious challenges these institutions face.

While a failure to prepare staff members in any setting is a failure to effectively plan for a disaster response, large academic libraries have a greater challenge facing them, in the form of numerous and often transient student employees. With student employees working often only five to fifteen hours a week, and perhaps for only one semester, the chances of finding employees properly trained in disaster response is extremely remote. As these students, who are generally working at reshelving books, are the most likely to identify a disaster in the stacks, such as broken pipes or a fire of any type, it is very important that they know how to react. Unfortunately, and understandably, they rarely do.

A major problem often not addressed by any disaster plan is how to deal with employees and their reactions to major disasters. While people are needed at work in order to protect collections and stabilize situations, they are also desperately needed at home at this time, or perhaps are often needed by friends. Effectively determining who can help, and in what capacity, early on in a disaster is a major step towards mitigating a breakdown in communication. A contingency planning manager for Chemical Bank stated in a 1990 article that, "Interorganizational communications ... is probably the most vital issue during a crisis. If you can contact the right people and give them the right information, you'll have a substantial head start on recovery" (Van Collie 1990, 36).

In addition, administrators must be aware of the serious post-traumatic stress disorders which may appear among employees. Such responses have been identified following a number of major disasters, including the California earthquakes. In addition to calling in conservators and individuals to deal with damage to books, artifacts, buildings, records, and other tangible items, "mental health care professionals should visit the library for all-staff and small group orientations on stress. Emphasis should be placed on identifying and coping with stress. The professional should return later for follow-up group therapy sessions or individual counseling" (Wynen 1993, 104).

How can libraries and museums effectively prepare themselves for disasters? A dynamic and effective disaster plan is the most important element of the process. Much of the work being done in disaster planning in the for-profit field can be applied to libraries and museums, and information on writing a disaster plan is easily accessible from a number of business information sources.

A number of books on disaster planning have been written specifically with the library in mind. Some, such as David C. Weber's *Library buildings and the Loma Prieta earthquake experience of October 1989* (1990), document past disasters in an attempt to assist others in preparation for future problems. How Southern California libraries utilized this book before and after the January 1994 earthquakes would be of particular interest. Other books focus specifically on preparing an effective disaster plan in a library setting. Important volumes include England and Evans (1988) and Fortson (1992), plus *Disaster Planning and Recovery* (1989), which is a valuable collection of relevant articles and chapters from books on library management.

Several recently published articles in the library field have highlighted the need for disaster planning and the important role this study is currently taking in the field. One such article is Miriam Kahn's (1994) cover article in *Online*, entitled "Fire, Earthquakes and Floods: How to Prepare Your Library and Staff." Her article, like others, attempts to assure librarians of the importance of such planning. "Events during the past two years have shown that no one can be too prepared for a disaster," she writes. "No one should be naive enough to believe their information center or library is safe" (18). Through case studies of libraries and information centers hit by disasters ranging from the flooding of Chicago's service tunnels in April 1992 to the bombing of the World Trade Center in February 1993 and the Los Angeles area earthquakes that hit

while she was writing the article in January 1994, Kahn describes what has worked and what has failed. Such analysis is crucial in providing information to others and assisting other institutions when preparing for the worst.

Sources such as Cerullo, McDuffie, and Smith (1994) provide valuable information on preparing a disaster plan, based on information gathered after Hurricane Hugo in 1989. In a survey of accounting firms in Charleston, South Carolina, following the hurricane, the authors found that much work needs to be done. They write: "Disaster contingency planning in general and computer contingency planning in particular have been put to the test. The disasters demonstrated that the ability to recover from a major natural or man-made disaster is crucial to a firm's success" (34). They found that 56% of the companies that responded to their survey did not have computer contingency plans in place at the time of the hurricane, and indicate that "these results were not unexpected" (36). Unfortunately, due to the total lack of information from the 44% of respondents who did have contingency plans, data regarding downtime or any other aspect of their questionnaire cannot be compared between the two groups.

A recently published book, *Writing Disaster Recovery Plans for Telecommunications Networks and LANs*, by Leo A. Wrobel (1993), is an excellent example of the work being done in new fields applicable to librarianship. Wrobel's book assumes the reader is in the process of writing a disaster recovery plan for a network, and as a result focuses the text towards what must be done and how to go about doing it, rather than recalling what has failed in the past. Such books are extremely valuable for planning, and must be included in a bibliography on the subject.

As with the Wrobel volume on protecting LANs, many other items in business settings are applicable to library and museum work. One area of major interest to for-profit corporations, but probably not to most non-profits, is the use of hot sites - locations providing complete backup computer services. They are invaluable to for-profit organizations with work that cannot be delayed, and such sites do have some relevance for libraries and museums, as well, especially those moving towards electronic catalogs. While these institutions will not have the time-critical work that brokerage houses or health care providers need to justify purchasing such a system, employees must still be paid - especially when a major natural disaster has occurred - and for large systems, a hot site might be a valuable resource. Kahan (1994) discusses the use of such hot sites in business settings; the important work for many libraries and museums is to take such research and apply it to their own situation.

Branscum (1994) and Storkman (1994) both provide specific information on how to minimize losses to computer systems during disasters. Relatively simple items, such as regular backups and the storage of backups off-site, may seem like unnecessary explanations, but many corporations have not yet taken the steps needed to protect their data should something go wrong, or store it in a manner that will allow them to successfully and quickly restore lost data. Storkman emphasizes the importance of practicing the restoration of data from backups, ensuring that it operates properly and can be done easily. Storage off-site is also extremely important. The off-site location must be near enough that access is not too difficult, but still far enough so that it will not be seriously affected by the same severe weather at the organization's main headquarters.

When Hurricane Andrew hit Florida in 1992, the corporate headquarters for Arby's, the fast food chain, was in the track of the storm. With a disaster recovery plan already established, and a hot site available in Atlanta, Arbys' Information Systems staff decided to move their headquarters to the hot site. Their off-site storage facility was too close to their corporate location, however, and the closure of the Miami International Airport kept the backup tapes from getting to Atlanta within 48 hours, as the goals of the recovery plan had specified (Carpenter 1993). Arby's disaster plan and hot site contract, however, helped the franchiser continue its payroll work as necessary until it was safe to return to their Florida building. As almost every business in America now has significant computing needs, and as libraries and museums are certainly among that group, these plans are extremely valuable.

The following excerpt begins Buchanan's (1988) book on disaster planning within libraries, but the comments are applicable to every organization that hopes to survive a disaster:

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A written plan is the single most important step in preparing for disasters[.] First, such a written document acknowledges that disasters are possible, and that there is a commitment on the part of the organization to accept responsibility in a sensible and logical way. Second, preparation and a written plan eliminate panic, assure proper decisions, reduce the damage to collections, and limit the cost of recovery. Third, a plan consolidates ideas and provides step-by-step instructions which are clear and easy to follow for anyone who is called upon to use them. (7)

By dividing the process of disaster planning into four topics, namely prevention, protection, response, and recovery, Buchanan presents a valuable guide detailing exactly what to watch for and what to avoid when writing a plan.

Disaster plans obviously cannot be designed to respond to every potential disaster. They also cannot indicate exactly how each individual should respond to a disaster. Every disaster will be different, and, almost by definition, will be unpredictable. The effective plan, however, provides workable guidelines to employees for appropriate responses to any disaster. An effective plan will allow response regardless of the type of disaster. An excellent example of the variability of a disaster plan comes from a study of the corporate response following "the largest mass murder in American history," which took place 16 October 1991 at Luby's Cafeteria in Killeen, Texas. At the time, Luby's was a chain of 151 restaurants. The company's CEO, Ralph Erben, responded immediately and followed guidelines laid out in the corporate disaster plan. This plan provided the structure needed to survive the catastrophe:

In a review of the disaster six months after the crisis, Erben reported that his best defense in managing the disaster was Luby's crisis-management plan which had been written just a year before the massacre. Although the plan dealt with food sanitation and issues other than violence, Erben says that the fact that he had a plan, had thought in advance of the myriad decisions inherent in a crisis, and had reviewed the document while en route to Killeen all helped in effectuating his response. (Barton 1994, 61)

This is an impressive example of the role a disaster plan can play when responding to a completely unexpected catastrophe.

In a similar vein, the staff of the Salt Lake City Public Library were publicly commended in the manner in which they dealt with a hostage situation in their main library last March. Library Director Dennis Day said after the incident was over without any serious injuries to the hostages that, "Clearly, a lot of things went right in a very difficult situation... In the first critical five minutes, our people did everything exactly right" (Flagg 1994, 294). Prior disaster planning paid off in this unexpected and totally unpredictable situation. In another interview, Director Day stressed the preparation the library staff has had in the past, and the role it played in March:

Day told [*Library Journal*] the library has taken several emergency precautions including the installation of an evacuation plan that it practices regularly. During the hostage crisis, staffers cleared the library in five minutes without any injuries. The library also has personal safety programs coordinated with the police and with psychologists to train staffers in dealing with people exhibiting erratic behavior. (St. Lifer and Rogers 1994, 17)

An important, but not always articulated, aspect of disaster planning is that human life is always first and foremost in any disaster response plan. All discussion of disaster planning presumes an understanding of this crucial tenet.

In special library settings, subject-specific topics must often be examined. While all disaster planning must be site-specific, certain ideas and plans can be passed between similar institutions. Eulenberg (1993) discusses disaster planning in corporate archives, a discussion which could easily be carried over to other archives of similar sizes, and an article on a fire in a one-person accountant's office contains valuable information for anyone managing a one-person library (Chase, Withrow, and Withrow 1994).

Many articles are written following disasters; one only wishes library and museum managers planned ahead and implemented such advice before a disaster occurred. An interesting example of such an article comes from a law librarian dealing with the aftermath of a fire in her library. Relating her experiences, she explains what was necessary before the cleanup could begin:

During the first days after the fire I spent a considerable time researching techniques for fire damage salvage. I did some research on-line and then started contacting overseas offices of my firm to ask for help and advice from my colleagues. They retrieved articles on fire damage from library journals and made enquiries about cleaning techniques for smoke damaged books. It became obvious that there was a considerable amount of literature about flood and water damage, but not quite so much on fire. (Mackinnon and Morgan 1989, 96)

The goal of the article is undoubtedly to help others in such a situation, but the most important point to be taken from the article is that the librarian was not prepared for such a disaster, and spent several undoubtedly frantic days trying to find anything and everything on responding to such a situation. Being prepared is the key to successfully surviving such an event. The librarian explains that *after* the fire, "I immediately started a 'FIRE' file and filed everything related to the fire in it" (95). Had she already collected information on appropriate responses, she could have begun cleanup immediately.

Disaster planning appears to be on its way to becoming a catch-word in management circles. Numerous articles are cropping up everywhere, with each one containing better, more accurate, information on how management can prepare their institution to survive a major disaster. Libraries and museums have special concerns which they must overcome if they hope to succeed as well as for-profit businesses. Recently published literature has shown clearly that a successful disaster plan *can* be created, and this must be done for every institution that hopes to survive a disaster and thrive in society and business today.

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